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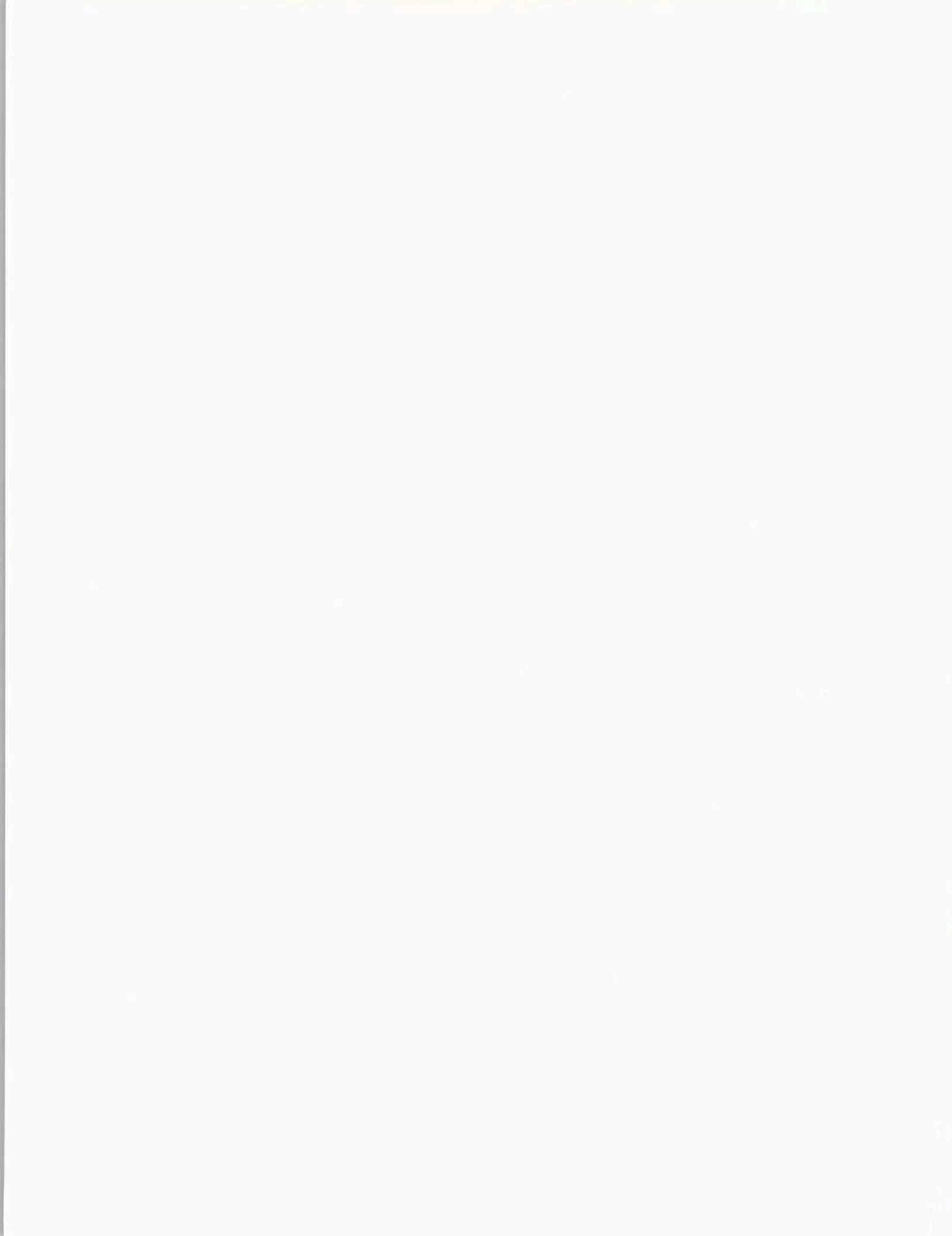
sustain

a journal of environmental and sustainability issues

The
Kentucky Institute
for the
Environment
and Sustainable
Development



**urban
regeneration:
smarter
growth**

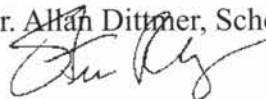


A Commitment to Kentucky's Sustainable Environment

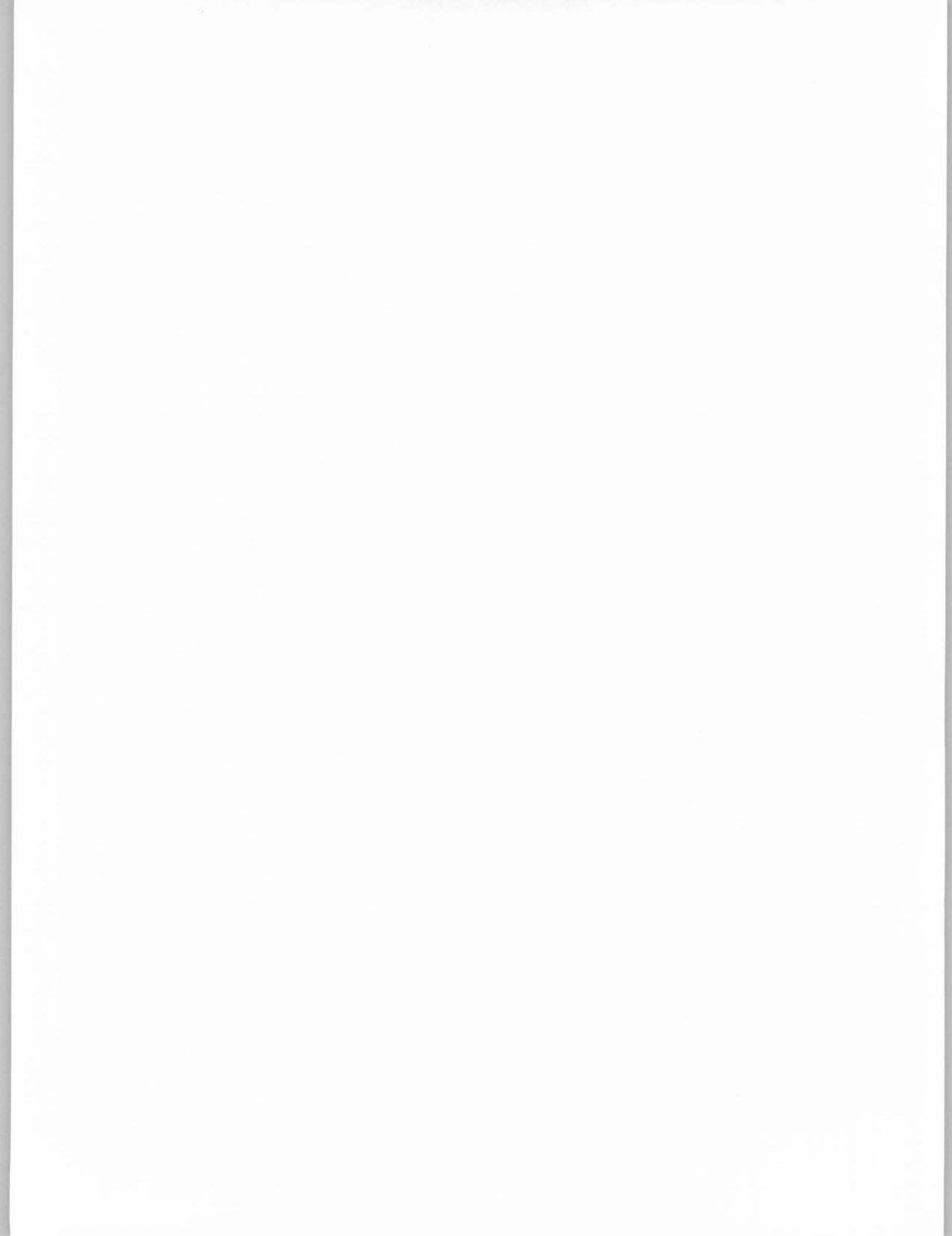
The 2001 session of the Kentucky General Assembly with passage of SB2 created a voluntary remediation/brownfields program for Kentucky after years of debate and discussion. Those debates have continued with draft regulations proposed by the Kentucky Natural Resources and Environmental Protection Cabinet this past summer. In January of this year, after long debate and several years' delay, the Congress of the United States promulgated a bill freeing the national effort to redevelop and reuse previously developed sites that might have had some environmental problems from the straight-jacket imposed by CERCLA, the 1980 Superfund Law. The Small Business Liability Relief and Brownfields Revitalization Act (H.R. 2869) provides liability protection for prospective purchasers, contiguous property owners, and innocent landowners and authorizes increased funding for state and local programs that assess and clean up brownfields. The cleanup of sites contaminated or potentially contaminated (referred to as brownfields) is a critical issue statewide that has been revitalized by these two legislative actions in 2002.

An overview of the brownfield problem and the links between the remediation of contaminated sites and economic development is presented in the article by Dr. Peter B. Meyer, Chair of the Center for Environmental Policy and Management, KIESD. Dr. Meyer argues that the development of brownfields should be addressed on a neighborhood or area-wide basis, rather than site by site. The inclusion of broader economic and social considerations would provide communities the highest returns on their remediation investments, however, the development of successful brownfield programs will require flexible standards, a formal system of monitoring and rigid disclosure requirements. The new Brownfield Revitalization and Environmental Restoration Act has the potential to significantly assist local communities to remediate contaminated sites. It helps create new federal-state-local-private partnerships while significantly increasing federal funding. The provisions of the law are outlined in the article by Charles Bartsch with the Northeast-Midwest Institute. Brownfield redevelopment is an important component of smart growth efforts to better manage sprawl, by encouraging concentrated development in urban centers. Joel Hirschhorn, with the National Governor's Association, discusses a relatively new argument for smart growth proponents—that sprawl contributes to public health problems associated with sedentary lifestyles. Sarah Coffin, a Research Fellow, KIESD, discusses the link between brownfields and low-income housing in urban areas. Her article points out that federal brownfield and housing policies operating independently accentuate negative real estate markets while concentrating individuals and families at the lowest economic rung. Jesse Silverstein, with a private research firm in Colorado, describes how one community in Colorado was able to transform an old landfill site into a city park using both public and private funds. The direct and indirect economic and environmental benefits identified in this project outweigh the \$2.4 million remediation cost.

The next issue of *Sustain*, scheduled for the spring/summer of 2003, will focus on large river ecosystems. The Institute welcomes any comments that you have about the journal. Please direct any comments to Dr. Allan Dittmer, School of Education, UofL, Louisville, KY 40292.



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The Kentucky Institute for the Environment and Sustainable Development (KIESD) was created in July 1992 within the Office of the Vice President for Research, University of Louisville. The Institute provides a forum to conduct interdisciplinary research, applied scholarly analysis, public service and educational outreach on environmental and sustainable development issues at the local, state, national and international levels.

KIESD is comprised of eight thematic program centers: Environmental Education, Watershed Research, Environmental Law, Sustainable Urban Neighborhoods, Pollution Prevention, Environmental and Occupational Health Sciences, Environmental Policy and Management, and Environmental Engineering.

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UNIVERSITY of LOUISVILLE
dare to be great

Brownfields Cleanup, Urban Regeneration, Smart Growth and Economic Development: They DO go Together

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Over the past decade, brownfield redevelopment has emerged as both a major economic development and environmental planning priority in the U.S. (Bartsch, *et al.* 1991; U.S. Conference of Mayors 1998, 1999, 2000). In moving center stage, the “contaminated land problem” recognized by the federal government has shifted from its original, narrow definition as an issue involving removal of environmental threats in the 1980 Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) toward broader recognition as an economic issue, exemplified by the passage of the Asset Conservation, Lender Liability, and Deposit Insurance Protection Act in 1996 and

the Brownfields Revitalization and Environmental Restoration Act of 2001, signed into law in January, 2002. Both of these Acts address the unintended economic disincentives generated by CERCLA while not abandoning the original environmental protection goals.

From an *environmental* perspective – whether driven by a concern for ecosystem impacts or effects on human health – unremediated or mitigated contaminated properties with polluted land and possibly water (and, under some conditions even potential air pollution risks) are undesirable. They are undesirable because of environmental quality and



Plating facility - by Tom Fougerousse, University of Louisville

population health conditions, and because they are “costly.” They may do damage to ecosystems that include, on the one hand, effects on biota and species health that bear no known relationship to human interests or concerns, but that warrant attention simply because such damage is unnecessary, unethical, and not necessarily all that expensive to avoid. On the other hand, damage is done to facets of ecosystems that affect human quality of life, whether aesthetically, morally, or more directly physically, through impacts on human health itself. Beyond these concerns, lie the purer monetary or *economic* costs of actual and perceived contamination of real estate. These are real damages that are more readily recognized than some ecosystem effects by private real estate market stakeholders. These economic impacts may not be fully understood or appreciated by the public sector decision-makers who are always looking for some readily defensible political rationale for commitments of special effort by non-environmental government agencies to address the brownfields issue.

Whatever the environmental consequences of ignoring brownfield problems, interest in local – or even global – ecosystem protection is not one that appears to attract substantial political or general public support. In the United States we generate several times the levels of pollutants per capita as the European countries that enjoy income levels as high or higher than ours. From a quality of life perspective, even many nations that do not match our monetary affluence perform better than we do, while exhibiting greater ‘non-economic’ concern for the environment. The U.S. perspective is very ethnocentric and instrumental: for the most part, we concern ourselves with environmental policies and practices only when we come to realize that the actions we might take could benefit us directly, either in terms of economic gains or quality of life. Concerned with how the policy issue shapes up and the need to understand it, I focus here on the brownfields issue from the point of view of the people – households, businesses and communities – affected by the presence of abandoned, underutilized, or simply contaminated sites in their midst.

This paper, therefore, first will review the basic brownfield problems, with some of the legacy issues and legislative histories at federal, state and local levels. I then will turn to a closer examination of the brownfields-economic development links, especially at the local level, before examining in more detail the real economic impacts of brownfield redevelopment (or the failure to reclaim and regenerate sites). With those effects in mind, I then address factors leading to public sector underinvestment in brownfield redevelopment before examining in particular the roles that

risk transfer tools such as environmental insurance can play in promoting brownfield remediation. I conclude with a review of major current issues as we look to the future of brownfield reclamation practices under new legislation and with improved understandings.

I. Industrial Legacies, Public Responses, and Residual Costs

Humankind has been fouling its nest for millenia. For most of our history, however, our wastes, the contaminants that we deposited into our air, soil and water, posed no immediate threats to our quality of life or health nor broader longer term impacts on the ecosystems in which we lived. This relatively benign condition was associated with two conditions that no longer apply. First, the numbers of people on the planet, or in any one area, were generally small enough that the toxins released were sufficiently diluted to not cause any problems, simply due to low exposure doses. Second, the toxins were biodegradable and did not accumulate substantially over time, so continued releases also did not add to the concentrations and exposure doses. The massive population explosions and development of an array of non- or slow-degradable products and production by-products that accompanied the industrial revolution changed everything in this equation.

Plant closings and downsizing from the 1970s on have left potentially contaminated sites underutilized in most communities across the country (Bartsch and Collaton 1996). These are the most visible faces of the brownfields issue. Spatial restructuring and simple business succession in local economies has added other, less immediately visible, but potentially more important sites – abandoned dry cleaners, gas stations, repair and metal working shops and other small service facilities – to the mix. The sheer number of these sites, estimated to be at least 500,000, attests to their importance (Council for Urban Economic Development 1999). Growing environmental concerns fuel the belief that sites that were used for industrial operations prior to 1980 are dangerously contaminated, but this accepted “fact” has not been verified (Davis and Margolis 1998; Gerrard 1998).

When Congress enacted CERCLA in 1980, it intended to speed up reclamation of acutely contaminated, but neglected sites. Unfortunately, while the Act has had many beneficial environmental impacts, court interpretations have led to unintended negative impacts on economic development efforts – and thus to the potential for attracting private capital to participate in site mitigations (Coffin and Shepherd 1998; Ryan 1998; Schwab 1997). The problem generated by

CERCLA rests with the fact that the current land owner (as well as all past land owners) may be held responsible for any environmental problems (and are considered to be “potentially responsible parties,” or PRPs) on a site – even if the contamination occurred before the current owner purchased the property. Redevelopment difficulties arise less from cleanup requirements than from the complex legal liability questions that arise from the principles of “strict” and “joint and several” liability language embedded in the Act.

“Strict” liability does not require the demonstration of any wrong-doing. This means that even if the contamination actions taken were legal at the time they were done, a party may still be held accountable for the costs of clean-up and environmental damages. This liability is also retroactive, meaning that even if the pollution occurred prior to the passage of CERCLA in 1980, the current PRPs may still be held accountable. “Joint and several” liability comes into play when there are several PRPs. CERCLA creates three general classes of responsible parties: generators of the hazardous substances found at the site, owners and operators of the site, and transporters who have the authority to select the site for disposal. The courts have held that any of these three classes of parties may be held liable for the entire cost of site cleanup, unless it can be shown that the harm is “divisible” (for example, where there are two or more physically separate areas of contamination).

This ambiguous potential liability has resulted in situations in which even those who in no way caused the contamination, or who acquired title when they did not want to (as in the case of loan defaults, inheritances, and tax delinquencies) experienced exposure to some risks (Bartsch, Collaton and Pepper 1996). For example, while CERCLA contained a “secured creditor exemption” that provided liability protection for lenders, in the early 1990s, the courts found that lenders could lose their liability exemption by foreclosing on a property or by participating in the daily management of a business. These legal decisions severely depressed brownfield lending – and thus the ability of many developers to use previously built-up sites (Yount and Meyer, 1994).

CERCLA thus put all previously developed properties at a competitive disadvantage compared to open land in attracting development capital. This, in turn, exacerbated the problem of city-suburb income differences, contributed to sprawl (whatever other forces may also have been at work), and perversely made it more difficult for the private market to correct past environmental misdeeds without direct

commands from the public sector. CERCLA thus compounded a problem that existed long before the Love Canal controversy and the passage of the Act.

The fundamental problem is that, whatever the extent of physical dangers present, “land contamination” as a market phenomenon involves more than merely on-site pollution. The Environmental Protection Agency’s working definition of brownfields (Kaiser 1998; ICF Kaiser and EP Systems Group 1998) has described them as “abandoned, idled or underutilized industrial and commercial facilities where expansion or redevelopment is complicated by real or perceived contamination.” EPA has specific land and water pollution in its sights in this definition, but the language incorporates an array of other factors which discourage regeneration of previously used urban lands. These factors weigh more heavily in the U.S. than other industrialized countries: factors such as crime, crowding, old infrastructure, and racism.

Unlike the physical problems caused by pollution on specific sites, these non-environmental elements of “contamination” are not amenable to piecemeal solution. The U.S. recognized this reality fifty years ago, when it launched a series of urban renewal programs, nominally to combat physical blight, but effectively to remove undesirable populations (Anderson 1964; Bellush and Hausnecht 1967). However misguided the “Negro Removal” programs may have been, they represented a recognition that the real estate appeal of individual sites cannot be transformed without also addressing their neighborhoods. In a modified form, more attuned to actual community interests and allowing for more bottom-up planning, the Model Cities Program, part of Lyndon Johnson’s “Great Society” and its War on Poverty, reflected the same recognition of the importance of area-wide approaches.

This insight, unfortunately, does not appear to have informed U.S. environmental policy over the past twenty years. Both the drafting and the implementation of CERCLA were highly focused on individual site-level contamination problems and associated remediation activities. The only off-site phenomena considered were those resulting from migration of contaminants from one parcel of land to another. As a result, discussion of the brownfields issue has tended to ignore both the implementation problems and rewards associated with off-site factors.

Since both the costs of inaction and the potential rewards of mitigation efforts are greater when viewed through an area-based, rather than a site-specific, lens, the single site focus

has led to much lower levels of government effort to address brownfields than a fuller social, environmental, and economic accounting would justify. As a result, local economies and ecosystems across the United States continue to incur an array of negative impacts such as those enumerated in Table 1 have significant economic implications. These impacts generate human health, social, political and economic problems at the local level that warrant response even if the environmental consequences of letting brownfields lie fallow are ignored. The fact that the negative consequences are not evenly distributed across space or population groups adds an equity dimension to the efficiency arguments for taking action on brownfields

II. Brownfield Reclamation and Local Economic Development: Smarter Growth?

Disregarding any of the costs associated only with contamination, there may be strong rationales for economic development organizations to subsidize mitigation costs on the grounds of nothing other than financial returns. These rationales will depend on (a) on-site environmental conditions, (b) the re-use potential of existing improvements on the property, (c) an array of local real estate market conditions, and/or, potentially (c) non-market public economic interests served by a successful redevelopment. A public subsidy may be warranted, depending on such factors and the impact of the new economic activity on the local "fisc," that is, the budget of the local government.

Table 1

Negative Impacts Associated with Un-Mitigated Brownfields

- The various forms of damage done to humans by contamination (loss of life, morbidity costs, healthcare treatment costs, etc.)
- The expenses associated with addressing the effects of ecosystem damage (potential losses from species extinction, additional costs to treat contaminated water supplies, etc.)
- The reduced real estate values – and associated revenue losses in the short run for local governments, associated with both contaminated sites and properties adjacent to brownfields or stigmatized by their proximity
- The social costs and conflicts associated with the environmental inequality across racial, ethnic or income class lines generated by brownfields, and those problems generated by the class and race segregation that very different environmental conditions will sustain
- The spatial expansion of urbanized areas as land within urban centers is abandoned and underutilized, with attendant costs in terms of increased travel times for residents and businesses, air pollution due to increased automobile use (producing both business expansion problems and human health costs), and the like
- The longer-term effects of poorly planned urban expansion or "sprawl," including the costs to local fiscs of underutilized and redundant infrastructure, and adverse property value trends associated with suburban location disamenities (including costs associated with automobile reliance, especially for aging populations).

Politically, the wider recognition of spillovers is one reason that local brownfields redevelopment should be pursued as part of a neighborhood or area-wide strategy, rather than a site-specific strategy. Financing approaches such as tax increment financing (TIF), that borrow against the additional taxes generated by a project, have the potential to raise more capital if impacts beyond the site are considered due to the larger tax base covered if off-site effects are included (Kronish 1998). But the real reason for taking more of an area-wide approach to considering brownfields redevelopment is that the impacts of abandoning—or reclaiming—such sites are felt across a metropolitan area or regional real estate market (National Association of Development Organizations 1999; Sierra Club 1999; US HUD 1998). The very presence of brownfields can undermine the economic competitiveness of a region by damaging its image while hollowing out urban centers and requiring major investments in infrastructure for new areas as existing infrastructure is underused and its maintenance is underfinanced. (Pepper 1998; Wright 1997). Amenity values for an entire metropolitan area associated

with redevelopment are widely recognized by groups across the policy spectrum (Trust for Public Land 1999a, 1999b;

Urban Land Institute 1997). Finally, brownfield redevelopment has been recognized by many state governments as a key tool in fighting sprawl and its consequences for human health and the environment (National Governors Association 2000).

Ironically, the original CERCLA focus on single sites is reflected in - or may be perpetuated by - much of the later writing on brownfields, typically characterized by case studies of individual development efforts with minimal attention paid to community effects. This myopic perspective was understandable early in the policy debate over the economic development effects of the Act (Cooney, *et al.* 1992). Given the breadth of debate and the range of state and federal policies with local area environmental conditions and economic opportunities, this myopic view is somewhat harder to accept in recent work. Yet one of the latest book-length contributions to the literature, Simon's 1998 volume for the Urban Land Institute, defines the brownfield problem specifically in terms of pursuit of the "highest and best use" values for individual sites, not as a community development issue. His approach reinforces and excuses the inability of public decision-makers to adequately include off-site effects in examining brownfield investment alternatives.

The single site focus poses a major barrier to public involvement with brownfields. By ignoring the range of potential costs and benefits, especially since the latter tend to be undercounted, planners and other public analysts end up recommending actions that effectively *underinvest* in brownfields, even given private rate of return investment standards. Decisions on whether or not to support specific brownfield projects need to consider:

- **Spillovers and Externalities** – Off-site impacts are all too often ignored, but, even when considered, are difficult to measure. Most economic development organizations do not have planning staff capable of describing the possible effects, let alone estimating probable dollar magnitudes. Moreover, few such groups have jurisdictions that span the entire local economic area that might be affected by a major regeneration of an urban core, or the rebirth of an old inner city neighborhood. Even when they can calculate specific spillover effects, the geographic area included may be too small to really incorporate the entire area affected.
- **Substitution Effects** – From a local public perspective, new economic activity on any one site may be offset by declines in similar businesses on other sites. A new shopping center, for example, may create jobs and sales

and earn its developer a substantial return, but may provide no net gain across the local retail market area, especially if sales and employment in other local stores decline. Public planners relying on private profitability criteria may thus misjudge their options, and fail to subsidize one brownfield reuse when another – unsubsidized, but offering little public benefit – is available. Here, too, the metropolitan area issue raises its head: will the local development organization care if a suburban mall kills off a central city retail area, since they are in different jurisdictions? Probably not. But even within a single municipality, failure to address substitution effects can lead to growth that is not as smart as it could be: a brownfield reuse that does not require public subsidy – but just substitutes for a nearby activity and land use – might be supported by planners when, with a little spending, an alternative use that could add more to the local economy was available as an option.

The real issue is the ability to understand the existence of alternatives and to make decisions keeping in mind the off-site impacts that may result from any one project.

A hypothetical example may serve well to illustrate what needs to be considered to accomplish smarter growth through brownfield redevelopment. For example, an older central city is faced with a brownfields with the following characteristics:

- a 3 acre publicly-owned site, with no known economically viable PRPs
- pollutants include a mix of lead, solvents, and petroleum
- a new, intense business land use would yield a \$6 million property value for the site
- the cleanup cost for mitigation for this use is \$3 million;
- that cost is \$2.4 million above the amount a developer could afford and still meet investors' profit criteria, given the need for a risk premium on the brownfield site
- the site is surrounded by a 1200 acre, largely residential, area with **no** large open spaces
- given the absence of substantial open space, consideration has also been given to redevelopment of the site as a public park, with recreational facilities and greenery.
- additional site mitigation and park development work would add an additional \$1 million to the redevelopment price tag
- the new private use would raise surrounding area values by an assumed \$10,000/acre
- the new public use would raise surrounding area values by an assumed \$40,000/acre

The difference in the surrounding area values has to do with the spillover amenities resulting from the on-site activity. The major property value increases would be realized on the parcels closest to the property itself, with the impacts tailing off with distance. For the sake of simplicity, we can ignore time lags in redevelopment and the discounting associated with impacts arising at different points in time.

Table 2 illustrates two different ways of thinking about the options. The decision implications of the shift in perspective are all too obvious. The weakness of the first calculation is clear even when the decision is based on the narrowest of dollar perspectives – the time it will take for the municipality to get back its tax expenditures (assuming a low real estate tax rate of 50 mills, or \$50 per \$1000 in valuation). A purely site-focused decision really cannot address the issues of smarter growth in a local economy, simply because no attention is paid to any of the off-site

effects. The 1200 acres in this example is the stand-in for the metropolitan area in a broader discussion of sprawl and smarter growth. When the local area is considered, even if there is no issue of substitution effects that could undermine the gains from the intensive private redevelopment, it cannot compete with the public reuse. The example is structured to make sure that the off-site effects dominate the numbers, since that is the reality in a metropolitan real estate market.

But Table 2 offers a different lesson as well. Assume that the park alternative is impossible, either due to land use restrictions, topography, or massively higher cost to cleanup the site (due let us say to a need to remove thousands of cubic yards of soil that could be left on site and capped for a commercial/industrial use). The Table makes a very important point about the extent to which the public sector should be willing to subsidize the private redevelopment. In the pure site-specific calculation, the apparent payback period for the

public coffers as an investor is 8 years. This is not a bad return, representing a rate of return of 12.5% in each year following the initial expenditure. It may even pay to borrow money for the initial investment of \$2.4 million. However, other investments the city might engage in may be preferable – especially if they show a visible payoff and return before the current elected officials are up for reelection.

Here is where the area-based approach shows its strength in justifying public actions that might not otherwise seem justified. A 37.5% annual rate of return is clearly spectacular – and a payback period of under three years means that a politician

Table 2

Public Sector Tax-Based Valuation of Redevelopment Options

Site-Specific Redevelopment Calculation

▲ **Private Sector Re-Use**

- subsidy needed: \$2.4 million (needed to attract the developer)
- new investment, property values \$6 million (on-site)
- taxes from reuse of the site: \$0.3 million/year (on the \$6 mill in new value)
- investment payback period: 8 years

▲ **Public Sector Re-Use**

- subsidy needed: \$4.0 million (more cleanup, park facilities)
- new investment, property values \$0 million (on-site)
- taxes from reuse of the site: \$0.0 million/year (ignores concession fees)
- investment payback period: forever

Area-Based Regeneration Calculation

▲ **Private Sector Re-Use**

- subsidy needed: \$2.4 million (needed to attract the developer)
- new investment, property values \$18 million (\$6 m on-site; \$12 m off-site)
- taxes from area-wide new values \$0.9 million/year (on the \$18 mill in new value)
- investment payback period: 2.67 years

▲ **Public Sector Re-Use**

- subsidy needed: \$4.0 million (more cleanup, park facilities)
- new investment, property values \$48 million (\$0 on-site; \$48 mill off-site)
- taxes from reuse of the site: \$2.4 million/year (on the \$48 mill in new value)
- investment payback period: 1.67

elected for a four year term can say that an investment for which he or she voted in an election year will have been paid off before the next one. From an area-based perspective, therefore, it is almost completely certain that the level of public investment in brownfields that we have seen in the United States has been lower than what would be appropriate. This underinvestment is due to the failure to consider off-site impacts.

III. Public Sector Responses: Smart Government Decision-Making?

Not surprisingly, the myopic perspective is gradually being extended. The Clinton Administration's Empowerment Zone/Enterprise Community program provides some recent US evidence of efforts at the national level to pursue area-wide goals in an array of urban redevelopment programs (Pepper 1997; Porter 1985, 1995). At the state level, geographically-targeted economic development programs emerged first in the explosion of state enterprise zones, most of which have symbolic, not real economic, value to developers (Meyer 1991). Specific area foci more recently have taken root in broader programs to support individual investments in targeted economic areas that are, more often than not, linked to zones of known brownfield concentrations (Bartsch, Collaton and Pepper 1996). Local efforts to limit sprawl and promote downtown land reuse and re-development are accelerating as well. These efforts, due in no small part to the requirements of the Clean Air Act, with which many central cities find themselves in "non-compliance," have addressed area impacts and the potential for pollution reduction associated with reduced commuting distances (cf: City of Minneapolis 1994; Environment and Development Seminar 1994; City of Chicago 1995).

To some degree, the brownfields problem is one of skewed perceptions and excessive fears on the part of both private and public sector actors. Furthermore, the economic costs that

actually are associated with dealing with past contamination are driven up by the inefficiencies generated by exaggerated cost expectations and the resultant distortion of local real estate markets. There is substantial evidence that these distortions both existed and were very costly in the 1990s, but that they are diminishing over time as more is learned about actual costs associated with completed brownfield redevelopments (Meyer and Lyons 2000).

Cost exaggeration can more readily be avoided if the major categories of costs are known and can be addressed individually. The mitigation cost elements are represented in Table 3, many of which may have value zero in the event that little contamination is found and/or state approvals for remediation or mitigation actions are obtained in a timely manner. The first group of elements involve transaction costs

Table 3

Developers' Cost Concerns Involving Brownfield Projects (*)

Transaction Costs

- Environmental assessment fees associated with determining the presence and extent of possible contamination
- Project delays, since site assessments take time to complete
- Potentially higher loan origination and debt or insurance underwriting fees
- Additional legal expenses, associated with staying current with changing regulatory requirements as project planning proceeds, even before launch of redevelopment effort

Cost Risks Undermining Returns on Investment

- Unexpected costs for property mitigation, even after completion of all site assessment studies and regulatory approval of cleanup plans
- Property stigmatization, associated with adverse publicity over conditions prior to mitigation
- Post-cleanup monitoring requirements, recorded public agency access easements, deed or land use restrictions, restrictive covenants and like, imposed either by prior owners/PRPs or by public sector regulators, that limit the future alternative activities on-site
- "Re-opener risks," associated with new mitigation standards or discovery of contaminants after completion of remediation and redevelopment efforts (potentially due to nothing more than improved contamination detection and mitigation technologies available)

(*) Derived from Meyer 2000.

associated with consideration of any brownfield site. The second are costs that affect rates of return on projects that are pursued, and involve costs that can arise after completion of the remediation or mitigation and the subsequent redevelopment. The actual costs of the project: site preparation, demolition, construction, etc., do not appear in the Table. Those are the routine expenditures associated with any development project and thus are not of particular concern to developers.

Transaction costs involve acquisition and processing of information. Much of the data involved is in the public record, or could be easily gathered and maintained by governments and development agencies for the sites they own or control. Given that the public sector controls much of the relevant data, even the costs to the local fisc of reducing transaction costs for sites owned by private parties may not be very high. The factors undermining returns on investment mostly involve risks and uncertainties, many of which can be controlled, or even eliminated, by public sector action or private risk transfers through insurance. In particular, the many state "voluntary cleanup programs" that permit developers to mitigate brownfields and earn certificates of completion or other assurances that their efforts meet state standards provide investors with greater certainty about their prospective environmental compliance burdens, and thus the costs that could undermine the returns on their investments. Since these programs involve checking on completed mitigations to assure they meet state standards, they can promote redevelopment without necessarily sacrificing environmental quality standards.

We have noted that real economic returns and benefits to states and communities can be generated by mitigation and redevelopment of brownfields. Those returns could easily

warrant expenditure of public funds to cover transaction costs. They may even warrant direct investments in redevelopments to enable developers to meet their profit target, since the public sector would thereby generate the area-based gains to society, the economy and the environment discussed above. However, benefit measurement efforts to date have tended to be distorted in efforts to score political points. There are, therefore, no good hard numbers that can be cited by advocates of local expenditures on brownfield redevelopment.

The US Conference of Mayors studies cited above, for example, relied on self-reporting by cities, with a non-representative sample of respondents and no consistency of definitions. Two old Northeastern industrial cities of similar size in the 1998 Mayors

study, for example, claimed the same number of brownfield sites and contaminated acres, but one claimed redevelopment would generate ten times the new tax revenues and double the number of jobs that the other anticipated. Clearly, the two cities were using different logics. Whether the differences reflected their political agendas or divergent perspectives on the brownfields problem, their responses are clearly not

comparable. As a result, the figures for the average number of jobs generated per tax dollar spent or per acre reclaimed that are reported by the USCM are meaningless, if not distorted. In fact, the estimated benefits from redeveloping brownfields reported across the three annual volumes of the study cannot even be compared: there is no consistency in the cities responding to each survey, with some answering only once, others several times – and with inconsistent benefit projections reported by many

of the cities that responded each year.

The USCM reports, however, were never intended to generate data for good planning decisions. Rather, they were tools for a lobbying campaign to get brownfields out from



Old Trolley Barn, Louisville



Inside Plating Facility, Louisville

under the CERCLA shadow. The recent legislation may suggest that they served that purpose well. However, in disseminating poor data on the real effects of brownfield neglect and redevelopment and in reporting only on-site impact estimates, the studies may have impeded good local decision-making.

Logically, if the objective of public brownfield policies is more than just contamination removal and if it incorporates a broad economic development mission, then the standard by which projects are selected for public sector support need to go beyond pollution mitigation on individual sites to consideration of the developments' impacts on their neighborhoods (Foxen and Knauerhase 1995). Smart government decision-making needs both the proper perspective and the data that permit accurate comparison of policy alternatives. Experience to date suggests strongly that, while brownfield redevelopment can make substantial contributions to smarter growth, increasing this potential benefit awaits smarter government decision-making about brownfields.

IV. Uncertainty, Risk Transfers and Brownfield Investment

The developers' cost concerns about returns on investment enumerated in Table 3 primarily involve allowances for risks associated with brownfield projects, large or small, that are expected to be greater than those for other real estate investments. As a result, brownfields suffer a competitive disadvantage compared to alternative investments simply because of the uncertainty developers recognize as present (Walker, *et al.* 1998). If the public sector wants to promote brownfield redevelopment, it must compensate in some fashion for the differential costs and risks of projects on contaminated lands. This compensation can take the form of financial incentives and subsidies to developers (tax abatements, reduced cost of capital, grants, etc.), or, alternatively, it may take the form of protection from project uncertainties that reduces demands for risk premiums in returns on investments.

Risk and uncertainty about project timing, costs and returns, more than the actual costs of cleanup or containment of contamination, repeatedly have been found to be the key factors restraining the redevelopment of urban brownfields (Chilton 1998; Coffin and Shepherd 1998; Walker, *et al.* 1998; Yount and Meyer 1994). Over the past five years, states have increasingly promulgated new programs and policies to reduce prospective liabilities and thus uncertainty for redevelopers of brownfields; federal legislative change has

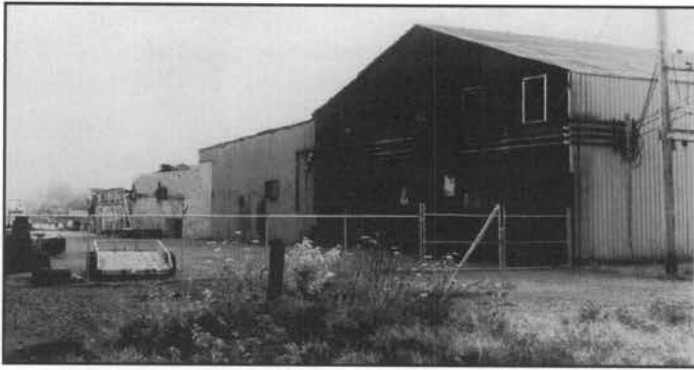
been slower in coming, but it, too, has moved in the direction of providing more certainty (Bartsch and Dorfman 2001; Meyer 2000). At the same time, the private sector has begun to provide more risk transfer and control services, in the form of environmental insurance (EI) for brownfield projects (Yount 2000). To understand better the roles insurance could play in local brownfield regeneration efforts if it were more widely available, it is necessary to briefly review the forms that coverage can take.

Insurance Coverages Available for Brownfields

There are three major classes of environmental insurance that are directly applicable to the problems of risk management and transfer and the broader issue of reducing uncertainty in efforts to bring contaminated sites back into more active use (Yount 2000). In addition, other environmental insurance products, available to consultants, engineers, and contractors, can play a role in brownfield redevelopment by reducing the risks professionals face in participating in the projects. The three major coverages of interest to developers are: Pollution Liability, Cleanup Cost Cap Policies, and Secured Creditor Policies.

There is no 'standard' package akin to home-owners or car insurance for any of these coverages. Each policy is 'manuscripted' (written with specially designed coverage elements and limits) to meet the particular needs of each individual project, so the insurance buyer must have the capacity to identify the specific mix of coverages needed and to negotiate with the underwriters.

- **Pollution Liability Policies** may involve any or all of some twenty-six different specific types of coverage, but always will incorporate a mix of three distinct elements:
 - Protection against the costs of third party bodily injury and property damage claims, regardless of compliance with governmental mitigation requirements;
 - Protection for the insured against the costs of further remediation and related expenses, if required after initial compliance with governmental mitigation requirements, due to exercise of regulators' 're-opener' clauses; and,
 - Protection against legal defense costs associated with the first two elements.
- **Cleanup Cost Cap Policies** limit the uncertainties associated with the risk that additional contaminants may be found and/or effort will be required as part of a



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cleanup; a half a dozen different types of unforeseen costs might be covered, depending on the manuscripting. The insurer pays the excess costs above a deductible amount (usually a percentage of the estimated cleanup cost). Engineers' prior estimates of cleanup effort and cost required are key to the cost and coverage of such policies, so developers need to invest in high quality information about their sites before they can begin negotiations and making decisions about buying the coverage.

- **Secured Creditor Policies** are written to benefit lenders, not developers. They reimburse lenders for the losses and/or costs in cases of a borrower defaulting while an unresolved pollution condition continues to pose a problem for redevelopment. Details about what makes a loan eligible for coverage and the insurer's willingness to repay the loan versus pay for completing needed mitigations enter into the policy manuscripting process. While the insurance does not directly benefit developers, the coverage can improve developer access to debt capital, and lower the cost of that capital by reducing the lender's risks.

Insurance and Small Scale Brownfields

The EI market for these three types of products has been expanding rapidly, but its application to brownfield problems mainly has been through the actions of large-scale private landowners and developers (Dybdahl 2001; Meyer and Lyons 2000; Meyer and Yount 2000). The



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vast majority of all brownfield sites, however, are small parcels, typically under half an acre in size. The cleanup costs on these sites are usually so low that individual insurance coverage for them is not cost-effective due to the fixed costs of underwriting the policies (Meyer and Chilton 1998; Yount 2000; Yount and Meyer 1999). Moreover, the development firms attracted to such small sites are likely to be too small to have the capacity to efficiently negotiate for the types of insurance coverage that would best serve their risk management needs.

Thus, on both premium cost and coverage negotiation efficiency grounds, investor and developer interest in reclamation of the small sites that comprise the majority of brownfields might be increased if some form of group coverage can be arranged. Given the greater public than private returns on investment likely from the small parcels that we have already discussed – and the fact that many brownfields actually are owned by local governments – a local public sector role in promoting group coverage may be the best way to go.

Thus far, however, only a small number of states have managed to apply public resources to providing any forms of insurance that benefit brownfield redevelopers. Cost-effective coverage for small parcels remains elusive, even within those programs. Risk transfers that will make a substantial contribution to accelerating reclamation and redevelopment, therefore, have to await the design and implementation of sufficiently flexible group insurance coverages to serve the needs of the small, scattered-site brownfields that permeate the nation's cities. While EPA is supporting efforts to develop models for such public sector programs, the designs are not yet available.

V. Looking to the Future: Issues and Opportunities

The inclusion of broader economic and social evaluative criteria for public sector planning and investment in brownfields redevelopment has obvious benefits to both the public and private sectors. The gains take both direct and indirect forms, affecting investment decisions on individual brownfield sites, but also shaping public policies and development efforts out-

side individual brownfields that can affect their market value through impacts across wide areas and real estate markets.

For private investors, the direct effects may include greater willingness of the public sector to provide some forms of subsidy - or larger subsidies - to projects on individual sites with potentially broad public benefits. Since these benefits cannot be included in the private, profit-oriented investment decision, recognition of the potential gains may induce support that makes otherwise not profitable projects financially viable undertakings. Especially in those cases in which some public, area-based, criteria or objectives constrain the development of a parcel to particular forms of new land uses, there is an arguably strong case for increased subsidies. The public interest in constraining the development options may justify provision of a subsidy to a project that is sufficient to permit the net private return on investment to be as high in the constrained use as it might have been had the private 'highest and best use' been permitted.

The public sector direct benefits follow the same logic: an area-based perspective permits management of the local fisc to pursue maximum gains in an objective function combining net revenue increases with public health impacts and social benefits. The use of the longer time horizon associated with an area-based approach permits the consideration of the secondary and tertiary effects of a single development and should support more effective use of the public sector funds and regulatory powers harnessed to the tasks of brownfield cleanup and redevelopment, as well as those of neighborhood, or broader urban, regeneration.

It is the indirect effects of a well-articulated area-based approach, however, that may provide the greatest gains to both private investors and the public as a whole. The key to these gains lies in the ability of an area-wide perspective to overcome the tendencies towards a disjunction between brownfield policy and broader economic development efforts. Infrastructure investments need to be considered in terms of their effects on brownfield redevelopment project viability, not just as indirect subsidies to new economic activity. That is why other types of redevelopment efforts, such as rehabilitation of public housing and other central city public sector real estate investments must be re-evaluated for, and potentially modified to increase, their positive spillovers to brownfields and changes in their market value. When new housing, new businesses, or new residents alter the character of a neighborhood, property values may rise - and a project promoting new mixed-income housing on clean sites may have the effect of making nearby brownfields economically viable investments simply by raising the sale price those prop-

erties could command after mitigation.

Urban sites in depressed neighborhoods that are burdened with environmental problems may be too massive a problem to be successfully mitigated and redeveloped by either the public or private sector acting alone. Recognition of this basic fact is, arguably, the rationale for the array of state Voluntary Cleanup Programs and other brownfield-oriented economic development incentives that have been promulgated in the past five years. As we have noted, changes in nearby land uses and public investments off-site, oriented toward area regeneration not brownfield re-use, can add value to contaminated or environmentally stigmatized sites. Similarly, as our discussion of the hypothetical example demonstrated, brownfield reclamation can add value to other real estate and make entire neighborhoods more attractive. Coordination of public sector interventions in land markets is essential to increasing leverage and benefits to the local society and economy as a whole, not just a single site's environmental conditions. The result can benefit all parties: actions that improve the quality of life and economic opportunities of central city residents can simultaneously contribute to urban sustainability for all by offering an alternative to the negative environmental and economic spillovers of abandonment and sprawl (Wernstedt and Hersh 1998).

This objective is best served by improved coordination and flexibility. These two conditions, in turn, require good records and open access. The new brownfields law requires that states make progress toward developing a "Timely survey and inventory of brownfield sites in the State." It also requires that information be available to assure that anyone potentially affected by a possible release of hazardous material or contamination already present in land or water can exercise the right to request state review of conditions and risks. These requirements, if implemented with an eye to increasing economic value as well as environmental mitigation, can help to stimulate the expenditure on records and access needed to inform good planning based on an area approach.

What is needed - and what none of the states can yet demonstrate they possess - is a brownfields reclamation program that combines the following elements:

- An inventory of sites both before and after mitigation, classified with respect to suspected or known hazards present and the assessment conducted (thus the certainty of information);
- A well-defined set of mitigation standards, designed to protect human health and the environment, but tied to

different land uses and thus risk exposures, and allowing for the use of engineering controls to isolate hazardous materials left on site;

- A formal system for monitoring any such engineering controls to assure they are maintained over time, including automatic funding for monitoring, provisions for dissemination of findings and powers to force re-engineering, new controls, or further site remediations as needed, and,
- A formal system for recording the limits on land uses and engineering controls present on all sites that were redeveloped with potentially hazardous materials left on site that includes:
 - automatic recording such that real estate attorneys will find the records in the course of any routine title search, in order to protect new buyers; and,
 - a mechanism to assure that any tenants or lessees on such sites are informed of the limitations on their uses of the site and the potential hazards remaining.

This combination of flexible standards with rigid disclosure requirements will serve the shorter term needs of redevelopment and reuse of brownfields while also serving the longer term needs of protecting ecosystem and human health from the re-emergence of hazards contained in the course of partial remediations and hazard mitigations.

Openness and flexibility, then, are not merely characteristics of good democratic governance. They are the tools of efficient regulation. In the brownfields context, they are the keys to effective remediation and redevelopment.

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THE BROWNFIELDS REVITALIZATION ACT OF 2001: How Communities Can Benefit from the New Law, and What Issues Will Need to Be Addressed During its Implementation

by Charles Bartsch
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On January 11, 2002, President Bush signed the Brownfield Revitalization and Environmental Restoration Act into law – nearly eight years after the first brownfield bill was introduced into Congress. A table at the end compares EPA's administrative program with the initiative authorized in the new law, which will promote greater interest in brownfield site reuse in a couple of ways: it will set the stage for new state-community-private partnerships that can resolve thorny liability issues that impede site reuse, and clarify the state-federal relationship regarding cleanup. Moreover, the Act will also help cities, communities, and private sector players overcome one of the most significant hurdles they face when trying to acquire and redevelop contaminated property – the lack of capital to carry out essential early-stage activities, notably, site assessment, remediation planning, and the actual cleanup itself when it is needed.

What the law will do from the vantage point of AUTHORIZING financing

The Brownfield Revitalization and Environmental Restoration Act authorizes a billion dollars for brownfields – sites that the new law defines as “REAL PROPERTY, THE EXPANSION, REDEVELOPMENT, OR REUSE OF WHICH MAY BE COMPLICATED BY THE PRESENCE OR POTENTIAL PRESENCE OF A HAZARDOUS SUBSTANCE POLLUTANT OR CONTAMINANT.” Clearly, great numbers of various types of sites may qualify for help under this definition, which is even broader than EPA's former working definition.

The new law authorizes a total of \$250 million per year (thru fiscal 2006) for grants to states, local governments, and tribes, as well as entities such as quasi-public redevelopment agencies and authorities. This money will be divided among two basic uses.

First, the law authorizes \$200 million annually for the basic grant program, which essentially replaces and expands what has been known as the “pilot” program. These funds will be awarded competitively for:

- ❖ site assessment grants – typically, up to \$200,000 per site, but EPA has discretion to increase this to \$350,000 under some circumstances (related to site size, potential benefit, and end use); and
- ❖ grants for cleanup – both to make direct remediation grants of up to \$200,000, to governments or non-profits, or to capitalize cleanup revolving loan funds (RLFs), up to \$1 million per applicant.

The new law will also make it easier for state and local grant recipients to run their revolving loan funds, because a couple of nettlesome requirements unrelated to the redevelopment process have been removed – which should ease loan processing and increase the value of the incentive to private party participants. And even though the direct cleanup grants will require a 20 percent match (which may be cash or “in-kind” services, including the value of the property itself if donated), this is a significant step forward in EPA's brownfields effort, since this will be the first time that the agency will be allowed to conduct cleanup activities with direct grants. Criteria for funding awards will also allow a wider range of activities, including “non-economic” uses that will help improve community quality of life. Applications will be judged on factors that include the extent to which the money will be used to protect human health and the environment; spur redevelopment and create jobs; preserve open space and parks; represent a “fair” distribution between urban and rural areas; and involve the local community.



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The new law opens up the basic grant program in two potentially significant ways. First, it permits sites with what the law states is “relatively low risk” petroleum contamination to be addressed through the brownfields program – and stipulates that 25percent of what Congress appropriates for the program (up to \$50 million) may be used for sites with petroleum contamination. This will help brownfield reuse proponents to better address the realities of the reuse process, where – on the ground at the redevelopment site – various contaminants are the norm. It will also be useful in small towns and many residential neighborhoods, where the predominant type of brownfield is the abandoned gas station. In addition, grant recipients will now be able to use a portion of the site assessment or cleanup grants to pay insurance premiums that provide coverage (such as for cleanup cost over-runs) for these sites. Insurance should help prospective site reusers secure private financing more readily, because it will provide a way to better quantify and manage risk.

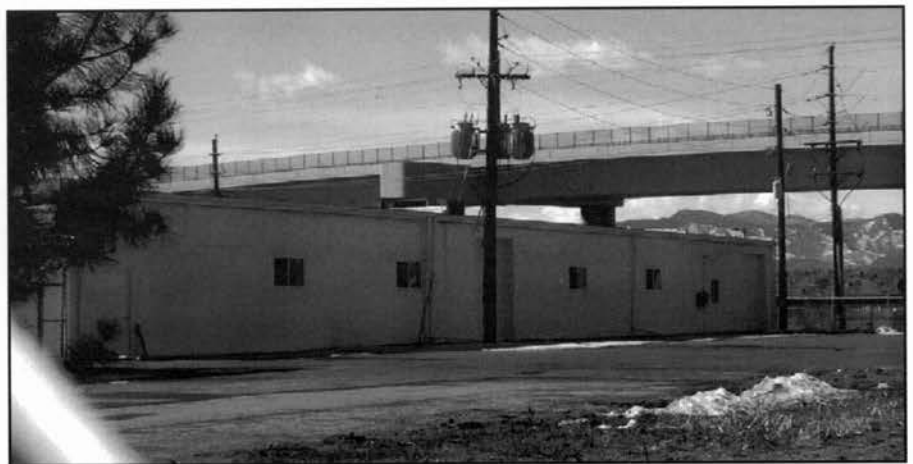
The second type of funding authorized in the law is devoted to states. The Brownfield Revitalization Act nearly triples EPA’s support of state response programs, authorizing \$50 million per year (thru fiscal 2006) for grants to states

and tribes to establish and enhance state voluntary cleanup and other response programs . This will be critical, given the enlarged state role in deciding which sites to cleanup. The new law will – in practice – turn over virtually all responsibility for brownfield sites to the states, while including strict limits on the ability of the federal government to pursue enforcement and cost recovery actions at sites addressed by the states.

To qualify for some portion of this \$50 million pot of funding, state officials will have to show EPA that their response programs (according to statutory language) “include” or are “taking

reasonable steps to include” elements such as adequate resources for oversight of cleanups to determine their effectiveness, enforcement, and sufficient monitoring of institutional controls (the latter being mechanisms such as deed restrictions, monitoring wells, or pavement caps which are used to safely contain contamination at a site). State programs will also have to provide for “meaningful opportunities” for public participation, such as access to information and mechanisms for comment on proposed cleanup plans. States will also have to maintain a “registry of sites” that have been addressed through their programs.

Several of these provisions in the law are quite



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vague, and it will be up to EPA to clarify what the agency means. But states will be able to use these new funds to build this capacity, and at this time no state is expected to be denied funding for failure to meet these stipulations. Moreover, the new law “grandfathers” funding eligibility to any state which had negotiated a brownfields memorandum of agreement (MOA) with EPA prior to passage. In addition, state officials will also be able to use these new resources to expand their own related program efforts if they wish; this could include establishing their own state-wide cleanup revolving funds, insurance mechanisms, or other efforts aimed at site cleanup and reuse.

What will be Congress’s response to appropriate funds for the program?

The Bush Administration’s fiscal year 2003 budget requested a total of \$200 million for both parts of EPA’s brownfield program:

- ❖ \$50 million (full funding) to enhance state voluntary cleanup or other response programs; and
- ❖ \$150 million for the balance of the brownfield program (\$50 million shy of full funding).



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The latter includes \$120.5 million for the basic assessment and cleanup grant programs, which makes the 25 percent petroleum project set aside referred to earlier about \$30 million for the coming year. It also

includes \$29.5 million for staffing and other program costs that the brownfield office will have to assume, now that it is an office in its own right and out from under the administrative wing of Superfund.

It will be up to key members of Congress to decide how strongly they will push for full funding of the newly authorized brownfield programs, and how the appropriate balance between state response program and grant program activities will be determined, relative to each program’s authorized level. The Senate is moving towards complying with the President’s request, (as of this writing). But nearly 70 House members, led by the co-chairs of the Northeast-Midwest Congressional Coalition, sent a letter to the House Appropriations Committee on April 19, 2002, seeking full funding to “...ensure that the broadest diversity of brownfield contaminants will be addressed by maximizing the amount of funds available...” In short, it is clear that significant bi-partisan support for brownfields exists to ensure that states and communities will see at least \$200 million for the program in fiscal 2003 – more than double any previous annual amount that had been available.

What will the new law do from the vantage point of the cleanup and reuse “process”?

In addition to funding, the new law will encourage more public-private partnerships with a common goal of site cleanup and reuse, because it clarifies vexing liability issues that deterred site acquisition and redevelopment. Specifically, the Brownfield Revitalization Act:

- exempts from Superfund liability owners of contiguous property – those who did not contribute to the contamination and who provide cooperation and access for the cleanup;
- clarifies the “innocent landowner defense” to Superfund liability, making it easier to use by referencing the nationally accepted Association for Standards, Testing, and Materials (ASTM) guidelines in the law, which make it easier to determine whether or not it applies; and

- exempts from Superfund liability prospective purchasers – those who do appropriate due diligence on a site acquired on or after January 11, 2002 (the date of the law’s enactment), who are not responsible for contamination at the site, and who do not impede its cleanup (the law includes windfall lien provisions for sites where the government pays for cleanup, thus enhancing the fair market value of the property).

These new liability protections will remove a significant barrier to private sector participation in brownfield projects, and allow new owners to quantify their risk much more precisely. Once a track record of examples and protection is built, these liability clarifications will probably become the most important provision in the new law.

The act also aims to clarify the state-federal relationship regarding cleanup finality. Sites addressed thru a state’s voluntary response program will now be protected from EPA enforcement and cost recovery actions under CERCLA, except in the case of a few statutorily defined “reopeners” – situations in which EPA can come back with an enforcement action. These situations include: sites where contamination has migrated across state lines or onto federal property; sites where releases or threat of releases present an imminent and substantial danger; sites where new information shows that a cleanup is no longer protective; or sites where a state requests intervention.

At the same time, the new law also poses additional requirements independent of CERCLA. States will need to maintain a “public record of sites” addressed through the brownfields program, and update it annually. In addition, citizens may request a state to conduct an assessment at a specific site, and a state must “appropriately” respond.

Does the law address every brownfield redevelopment process concern with the necessary specificity? Of course it doesn’t. As with any environmental statute, the language will need to be interpreted, and real cases evaluated in their contexts to determine what it can and cannot do. For example, lawyers and others have already raised questions regarding what level of “due

diligence” will be adequate and appropriate to secure liability exemptions, how windfall liens will be determined and assessed, and what protections the ultimate site end users will be able to claim. But many of the fine points related to implementation will be



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addressed by EPA through policy and program guidances (and not via formal regulations) over the coming year, and these pronouncements will influence the ultimate impacts of these provisions.

Eventually – as information is disseminated and accepted, and word gets out and the number of case examples grows – liability protection will remove a significant barrier to private sector participation in brownfield projects, and allow new owners to quantify their risk much more precisely – and with this greater certainty will come more comfort in doing brownfield projects. This will give local officials a good marketing tool to promote site redevelopment – especially as it is linked with property assessment resources, institutional controls, and the application of innovative clean up technologies. It will strengthen the ability of developers to market building sites and attract lessees to new facilities on brownfield sites.

How will all this be implemented, and when?

Federal EPA has defined an ambitious schedule for implementing the new law, which it will do through guidances and policy statements, not through regulations. EPA has publicly stated on numerous occasions that it is determined to have award criteria for its newly authorized brownfield funding programs

ready to go by October 1, 2003, with first-stage applications due in November and final applications in December. The agency has set up more than a dozen work groups and task forces to put the implementation gears in motion – no easy task, given the number of issues that need to be addressed.

States are given both new opportunities and new responsibilities in the Act, and a number of state program issues need to be addressed:

- ❖ how site cleanup certainty stemming from state VCP or response programs will be incorporated into the process during the coming year;
- ❖ what type of “finality” transition will be defined for sites in process – those that had entered state VCPs prior to the law’s January 11 enactment, but were completed after that date;
- ❖ how states will eventually need to meet the law’s response program criteria to make them eligible for a share of the \$50 million authorized for this purpose, and what that state program allocation process will be;
- ❖ how newly eligible state grant activities, such as adoption of insurance mechanisms or formation of risk-sharing pools, will be encouraged and phased in;
- ❖ what state efforts will be needed to maintain a public record of sites and how their status will be deemed acceptable, in terms of receiving state brownfield resources; and
- ❖ how public participation and state responses to citizen requests for assessment will be defined, evaluated, and acted upon.

As indicated above, a big focus of the new law is liability clarification – simple in concept, but complicated in implementation; the “devil” will truly be in “the details.” Accordingly, lawyers and others have raised a number of issues that will need to be resolved in order for the full benefit of the law to be realized:

- ❖ how ASTM or other standards will be incorporated, as part of the clarification of the innocent landowner defense;
- ❖ issues related to due diligence – under what circumstances, and how much;

- ❖ how data generated during a remedial action, prior to completion, will expose a site owner to EPA enforcement under the reopener provisions;
- ❖ concern that the “threat” that this data suggests is, in fact, a standard without limits;
- ❖ concern that the enforcement bar, which applies to those “conducting” or “completing” the cleanup, will discourage projects by developers and others who will not be the end-users;
- ❖ the process by which end users will be able to claim liability relief; and
- ❖ what type of “transition” process or steps will be required of site owners seeking liability clarifications for properties taken through state programs after enactment, but before policies were put into place.

Finally, these additional issues have arisen during analysis of the new statutory provisions and discussions of those provisions with public and private practitioners. They include:

- ❖ impact of the revised brownfield definition in the new law;
- ❖ how EPA will develop a transition process for its revolving loan fund (RLF) money, to allow recipients to use a portion of their award for direct grants instead of loans, so that fiscal 2002 RLF awards can take advantage of the new law’s provisions;
- ❖ how new eligible uses of grant funds – for petroleum cleanups and insurance premiums – will be encouraged and phased in during FY 2003 awards;
- ❖ how new types of eligible grant recipients – such as non-profit economic development organizations and redevelopment agencies – will be brought into the process;
- ❖ the process by which EPA will make its “case-by-case” determinations that otherwise ineligible sites and facilities can be included in the brownfield program and qualify for program support;
- ❖ how EPA regional office staffing needs will be determined in the face of a significantly expanded program; and
- ❖ how various public participation requirements will be defined and evaluated, including responding to requests by any potentially impacted party to conduct site assessments.

What will the ultimate impact of the Brownfield Revitalization and Environmental Restoration Act be?

No one can really determine this now, but the law does equip developers, communities, and other interested brownfield reuse advocates with new tools that have significant potential to promote the cleanup and economic revitalization of contaminated sites.

For more information, including updates on appropriations and implementation issues, contact the Northeast-Midwest Institute at: nemw.org; or Charles Bartsch directly at: cbartsch@nemw.org

COMPARISON CHART

| Former EPA Brownfield Pilot Program (administrative) | New (as of 1/11/02) EPA Brownfield Program (in law) |
|--|--|
| DEFINITION | |
| EPA administrative definition: abandoned, idled, or underused facilities where expansion or redevelopment was complicated by real or perceived contamination | Defined in law as: real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance pollutant or contaminant |
| IMPLICATIONS OF DEFINITION | |
| limited in some places and in practical application/interpretation by the fact that it was not statutory | in law, more extensive, and now specifically includes "mine-scarred" land, petroleum sites, and drug labs |
| TOTAL PROGRAM FUNDING LEVEL | |
| \$93 million, as included in the Superfund appropriation | \$250 million authorized: \$200 million for assessment and cleanup grants, and EPA's support program; \$50 million for state programs (NOTE: Congress is providing \$200 million total for FY2003) |
| GRANT AMOUNT CAPS | |
| \$200,000 for assessment pilots, and \$1 million in RLF capitalization; communities could seek supplemental funding in subsequent rounds | \$200,000 for assessment grants (up to \$350,000 at EPA discretion), \$200,000 for cleanup grants, and \$1 million for Revolving Loan Fund capitalization; focus shifts from communities to sites |
| ELIGIBLE GRANT RECIPIENTS | |
| states, tribes, and units of local government | above, plus redevelopment agencies and authorities and non-profits |
| ELIGIBLE GRANT USES | |
| for assessment and pre-development activities | in addition to above, grants may be used for direct cleanup (with 20% match), to pay for insurance premiums, or to monitor and enforce institutional controls; up to 25% of appropriated amount may now be used for any of these activities at petroleum contaminated sites; administrative costs barred |

(Comparisons continued on Page 22)

**Former EPA Brownfield Pilot
Program (administrative)**

**New (as of 1/11/02) EPA
Brownfield Program (in law)**

REVOLVING LOAN FUND FEATURES

full compliance with NCP; loans (at low- or no-interest) only

NCP requirements to be lightened in guidance; loans (at low- or no-interest); a portion of the RLF grant (to be determined, possibly 40%) may be shifted by recipients to cleanup grants

STATE PROGRAM SUPPORT (Subtitle C)

approximately \$15 million annually, to assist communities with various pre-development brownfield tasks

\$50 million annually, to enhance and support voluntary response programs; encourages flexible approaches to supporting community brownfield efforts, such as insurance or risk pools,

**CRITERIA STATES MUST MEET
FOR SUBTITLE C FUNDING**

none

states must have in place or “be taking reasonable steps” to put in place voluntary cleanup or response (VCP) programs, tally sites at which response actions have been completed in the previous year, are planned for the coming year, or include institutional controls as part of the remedy, and also address four other elements: a timely survey and inventory of brownfields; adequate oversight and enforcement; ability to provide meaningful opportunities for public participation; and include a mechanism for approval of cleanup plans and documentation that a response has been completed

LIABILITY

Superfund/CERCLA strict, joint, and several

takes prospective purchasers, innocent landowners, and contiguous property owners out from under the Superfund liability umbrella if certain conditions (such as due diligence) are met, as of 1/11/02

CERTAINTY OF STATE RELEASES

EPA “hands-off” policy, strengthened by memoranda of agreement (MOAs) in place with 17 states at time of law’s enactment; EPA could still – legally – overfile state decisions

law shifts all responsibility for sign-off to the states, except in a few specifically defined “reopener” situations (ie, contamination found on federal property, which has migrated across state lines, etc.)

**COMMUNITY
INVOLVEMENT/DISCLOSURE**

pilot applicants had to show how community participation would be achieved; other existing EPA policies relied on

states must: maintain a registry of sites addressed through response programs, and update it annually; identify sites planned to be addressed in the coming year; and identify any institutional controls used in the remedy

The Brownfields-Housing Connection: A Problem in Need of a Solution?¹

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INTRODUCTION

Efforts to acquire housing by low-income residents are hindered by both the lack of decent affordable housing and by poor environmental conditions often found in inner city neighborhoods. In particular, the presence of brownfields in low-income communities simply makes the concentrations of inner city poverty and decay worse. There is a connection between the co-location of affordable housing and brownfields that compounds the urban blight of distressed neighborhoods, and current federal policies designed to address both brownfields and the availability of decent affordable housing aggravate the problem by further narrowing housing opportunities available to this underserved population.

How are these federal policies mutually reinforcing? Researchers have shown that the concentrations of Section 8 households (low income families) further depress already low real estate values in urban neighborhoods that have limited real estate markets (Galster 1999). At the same time, researchers have demonstrated that brownfields depress even further the real estate market in these same neighborhoods, thereby attracting mostly residents with the fewest choices in their housing decisions (Coffin 2002; Leigh and Coffin, 2002). Thus, given the concentrated nature of depressed real estate in these inner-city locations, the brownfields typically remain damaged property so redevelopment is not considered an option in these neighborhoods. The result is a vicious cycle of neglected brownfields in neglected communities.

Federal brownfield and housing policies accentuate these negative real estate market conditions even further through risk avoidance strategies that direct investment away from the most distressed and blighted

neighborhoods. The predominant policy approach toward brownfield redevelopment at the federal level focuses on specific sites as demonstrations of best practices for remediating brownfields. In other words, this policy promotes the notion that site selection should be based on the marketability of the site. At the same time, federal low-income housing policies promote portability of benefits; encouraging program participants to move away from declining neighborhoods with the goal of increasing federal government resources by helping participants procure low-cost housing. As separate policies, they make sense because they promote and encourage individually efficient market solutions. However, when the two protracted urban problems are connected, brownfields and lack of decent affordable housing, the desired outcomes fail to materialize. Brownfields in the lowest income neighborhoods remain unaddressed while the lowest income residents seek housing in these same neighborhoods. Thus, an urban policy focus that jointly addresses brownfields and lack of decent affordable housing should help bring an end to this spiral of urban decay.

The Policy Issue

The presence of brownfields in urban neighborhoods serves as a deterrent to that neighborhood's redevelopment. The primary barriers include liability issues associated with potential contamination, lack of financial resources to conduct the remediation and redevelopment, barriers to information in the brownfield real estate market that increase uncertainty and risk, and lack of market demand for remediated properties (Bartsch 1996; Bartsch and Collaton 1995; Coffin and Shepherd 1998; Davis and Margolis 1997, 1999; Yount and Meyer, 1994). The barrier that has not been taken into consideration, however, is the problem presented by the location of the brownfield site within an urban

neighborhood and how that affects the housing options available to residents of the inner city.

Because there is variation in the economic and socioeconomic structure of most central cities, there is variation in the impact that a brownfield has on surrounding neighborhoods. A brownfield in a vibrant commercial/industrial corridor has a different impact on the surrounding community than a similar brownfield in a low-income neighborhood. The economic activity in the commercial/industrial corridor will likely counteract the potential negative impacts of the brownfield assuring that the brownfield will be redeveloped with little or no public financing. By contrast, a brownfield in a low-income neighborhood causes potential investors to overlook the neighborhood for possible redevelopment, regardless of the availability of public financing. Thus, location of a brownfield site presents yet another barrier to neighborhood redevelopment.

The reason for adding location to the mix of barriers to brownfield redevelopment is two-fold. First, while brownfield issues permeate all aspects of land-use and redevelopment, they pose especially difficult problems for inner city neighborhoods. These urban areas are usually the locations of the highest brownfield concentrations and the fact that these brownfield properties remain idle, abandoned or otherwise underused further fuels the blight in these areas. Second, these sites are also typically the locations of the highest concentrations of poverty and crime so it becomes even more important that they be returned to successful uses so that other, equally pernicious urban issues can be addressed. Urban policy must address the reduction in demand for brownfield properties due to limited development potential. This demand reduction is often what leads to further abandonment of the surrounding area, leading to erosion of the tax base and creating a downward spiral of the health and vitality of the neighborhood (Leigh 1996). Allowing brownfield properties to remain unremediated drastically limits current policy efforts focused on reducing blight, while simultaneously creating more properties that attract illicit activities and vagrant residents (Simons and Iannone 1997).

The predominant policy approach to brownfields influenced by federal policy, has been one in which communities typically consider brownfield properties individually, as specific problems with specific remedies with little thought given to the potential connections between brownfields and other urban policy issues such as the availability of decent, affordable housing. The EPA, for example, through its Targeted Brownfields Assessment Program, demonstrates the agency's preference for dealing with specific sites and meeting criteria specific to these sites. These are identified locations where neighborhood reinvestment is already occurring. While no mention is made of projected reuse, vague references to environmental justice concerns are suggested, indicating some recognition of community impacts from brownfields (US EPA 2002). As another example, the Department of Housing and Urban Development's Brownfield Economic Development Initiative requires that proposals for funding demonstrate ways to direct residents away from existing neighborhoods, allowing them to "relocate to environmentally healthy housing or neighborhoods which have more amenities and services..." optimistically suggesting that these residents will be successful in finding such locations and securing housing there (HUD 2002). Individually, these programs appear to promote sound urban policy, yet the reality found in many inner city communities where these policies are applied, yields outcomes that are often far from the desired results.

Further complicating the brownfield-generated divide between healthy and distressed neighborhoods, is the widening income gap between those who can afford decent housing and those who cannot, further isolating the poor from the rest of society. In 1999, the Department of Housing and Urban Development published findings that showed a record 5.3 million households were in need of some form of housing assistance, despite unprecedented economic prosperity (USHUD 1999). Federal housing assistance programs attempt to address the affordable housing shortage through federally owned or subsidized housing units. The public housing and Section 8 Housing Voucher Programs both offer fixed-cost rental housing, with the Section 8 program providing a measure of portability in benefits. However, as the need for affordable housing

increases, the implementation of the Section 8 Housing Voucher Program and others like it remains problematic. Waiting lists for participation are long and often the supply of available units is limited, with rents remaining out of reach for the lowest income residents (Smith 1999).

While inner city revitalization has taken a decidedly community development focus with programs like HUD's Empowerment Zone and Enterprise Communities which are designed to empower communities and build stronger neighborhoods, brownfield redevelopment and affordable housing policies continue to rely on market-based decisions. With more than five million families needing housing assistance, affordable housing policies do not seem to be fulfilling the needs of those who most need it (USHUD 1999). With the shift in urban housing policies toward market-based allocation of assistance (Salama 1999; Smith 1999), it appears that the poorest residents are falling further behind despite the nation's overall economic prosperity. The current brownfield and low-cost housing policies seem to be causing the very problems they seek to address. The question remains, to what extent does current public policy reinforce the avoidance of low-to-no market brownfields in distressed communities and how does that reinforcement further impact the shrinking supply of affordable housing?

Recently, research on the connections between brownfields and Section 8 housing in Cleveland, Ohio determined that the highest concentrations of Section 8 households were located in neighborhoods with high concentrations of brownfields and poorly maintained housing (Coffin 2002). In light of that finding, one must conclude that the locations of Section 8 households are influenced by the distribution of brownfields in urban neighborhoods and that influence is two-fold. First, while the mobility offered by the Section 8 Housing Choice Voucher program allows participants flexibility in housing choice, the structural requirements of the program limit housing options for program participants, as the highest concentrations of Section 8 households are in areas where there are high concentrations of both brownfields and at-risk housing. Second, as modeled in the research, this limiting factor appears to be related to the blight found in areas where there are high numbers

of brownfields, showing that the poor structural quality of housing appears to be related to brownfields (Coffin 2002).

Policy Implications

While policy makers less well versed in the nuances of brownfield redevelopment have been reluctant in the past to promote residential reuse of brownfields, the evidence from recent research suggests that the public might be ready to explore this new direction in brownfield redevelopment. With Section 8 households in Cleveland more than two times as likely to locate near a remediated brownfield, the results demonstrate that these low-income residents are already locating in brownfield neighborhoods. By adding housing to the list of potential reuses of brownfields, this places the harder to redevelop brownfields, typically found in these distressed neighborhoods, in a more favorable position for development, especially housing development. These sites are typically smaller, single parcel sites that are not suitable for commercial or industrial redevelopment. Given their demonstrated depressed property value, the lower purchasing prices may help reduce overall redevelopment costs. Thus, by focusing brownfield redevelopment toward residential reuse in these scattered low-to-no market brownfields, this may provide solutions for both the brownfield and affordable housing dilemmas in these communities.

In sum, the case for connecting brownfields and housing can be made and promoted in a fair and equitable way. Such a connection is important because it not only addresses a difficult urban problem, low-to-no market brownfields; it promotes a solution to the affordable housing problem. Further, it can help address the issue of urban sprawl by offering an alternative to the fast-spreading suburban development located on the urban fringe.

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Centennial Park Expansion Project, Englewood Colorado: An Evaluation of Economic & Community Impacts

Jesse D. Silverstein
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INTRODUCTION

The City of Englewood, Colorado, a first-ring metropolitan Denver suburb, has expanded its popular Centennial Park through acquisition and development of an adjacent 9.4 acre former landfill site. The expanded park straddles the South Platte River at Union Boulevard in the southern portion of the "South Santa Fe Corridor."

The City initiated the Centennial Park expansion in response to citizens' emotionally charged outcry in opposition to a proposed waste transfer station on the site. Rather than further an image as an "old industrial town", community members recognized the significance of transforming this environmentally challenged property into a regional park amenity to improve the quality of life for residents, leverage long-term economic strength for the business community, and provide a catalyst for additional redevelopment along the South Platte River. To address this challenge, City leaders utilized private-, public-, and quasi-public financial partnerships. Importantly, the City worked cooperatively with local and state environmental regulators to identify and overcome significant environmental concerns.

A Community in Transition

The former landfill site is both a remnant of the City's industrial history and a catalyst in reclaiming the South Platte River as an important community asset. During earlier times, industrial operations located along the river were used to access water for operations and to discharge wastes. Nearby residential construction provided housing for workers. Over time, riverbanks became lined with landfills, junkyards, asphalt and cement batch plants, and other odious uses that impact those residential neighborhoods and hinder economic development efforts.

Economic shifts favoring services rather than manufacturing industries, combined with improvements in transportation and telecommunications, have enabled greater mobility in economic activity. Businesses no longer need to locate near the "river." For example, in Chattanooga, Tennessee, residents began to leave the city, a workforce exodus taking with them the tax base that had supported police, sanitation,

road repair, and other municipal services. Departing residents explained that they were moving to cleaner, greener, and safer neighborhoods.

Corporate CEOs say quality of life for employees is the third-most important factor in locating a business, along with access to markets and availability of skilled labor.¹ Chattanooga successfully addressed its workforce issues, citing the construction of parks, trails and open space as a major factor in a strong economic revival. While Englewood is not experiencing a visible, rapid exodus of people and businesses, it is proactively updating itself to meet modern economic and social demands. Englewood's Centennial Park expansion is a positive step toward recovering a significant stretch of the South Platte River as a community asset.

Project Description

The Centennial Park expansion will transform an adjacent 9.4 acre former landfill site into multi-use public space. The project will include a Rockies Youth Field of Dreams baseball field,² a softball field, soccer field, trail connections to the Mary Carter greenway, expanded access to the South Platte River kayak chutes, restrooms, and a picnic pavilion.



Centennial Park before expansion and development, Englewood, Colorado

The \$2.4 million expansion involves contributions from both public and private interests. The Colorado Lottery, All Souls Catholic School, the City of Englewood, and the Colorado Rockies' Youth Field of Dreams program have all provided funding for site acquisition and construction.

Much of this site was once used as a landfill. A \$20,000 U.S. EPA Brownfields Pilot grant was used to conduct environmental assessments for acquisition due diligence³. After the investigation and analysis, it was determined that the proposed use necessitated the construction of a methane venting system and the installation of a clay cap over the site. This expensive proposition threatened to stall development indefinitely. A \$705,000 Colorado Brownfields Revolving Loan Fund⁴ (“CBRLF”) loan to pay for these environmental engineering solutions has been instrumental in accelerating site development from a visionary goal to a community asset opening to the public this year.

ECONOMIC, COMMUNITY, AND ENVIRONMENTAL IMPACTS

The Centennial Park expansion will generate benefits through various mechanisms.

Direct Economic Impacts

Direct economic impacts include the initial investment in developing the site, and revenue generating activities in the park. The expanded park will have a regional draw, attracting sports teams, parents and other visitors from around the larger metropolitan area.

The initial investment contributes \$1,390,000 in direct economic impacts:

- \$729,000 to local environmental consultants for assessment and remediation work; and
- \$661,000 to local construction contractors for construction of the park.

Based on projected field use provided by the Rockies’ Youth Foundation, Englewood Parks and Recreation, Englewood High School and All Souls Catholic School, it is estimated that there will be three to ten games per week at each field (baseball, softball, soccer) during the spring, summer and fall season. This amounts to an estimated 450 players and spectators each week, or 1,800 each month. During the seven month recreation season more than 12,500 visitors could potentially use or visit the Centennial baseball, softball and soccer fields. If each visitor averages \$5 in athletic fees and concessions, annual economic impacts would total an additional \$62,500 annually.

Athletic league fees and concession sales will be the only revenue generating activity directly associated with the park. Fiscally, it is anticipated that park operations will break-even with revenues just covering park maintenance costs.

Indirect Economic Impacts

Improved Business Climate

Accumulating evidence indicates economic growth occurs where there is a high quality of life and that green space is an investment that produces long-term economic benefits. A survey shows that Colorado based economic development professionals generally agree that parks and recreational amenities improve a location’s economic development potential and overall business climate.⁵

People are interested in living where there is a high quality of life and businesses are interested in locating in an area that has an available workforce. A recent study found that owners of small companies ranked recreation, parks, and open space as the highest priority in choosing a new location for their business.⁶ Colorado economic development professionals report that businesses considering “business park locations” are quick to ask about nearby running, hiking and biking trails. Similarly, a national study of real estate professionals calls livability “a litmus test for determining the strength of the real estate investment market... If people want to live in a place, companies, stores, hotels, and apartments will follow⁷.”

Business investment stimulated by park and open space development has occurred in many areas across the nation. In the Chattanooga example, local government, businesses, and community groups banded together to invest in open space acquisitions and park construction to improve their business



Centennial Park before expansion and development, Englewood, Colorado

climate. In the eight years between 1988 and 1996 the number of businesses and full-time jobs in Chattanooga’s targeted district more than doubled, and assessed property values increased 127 percent. Over the same period, the annual combined city and county property tax revenues increased 99 percent.⁸

Parks and open space can indirectly play a role in providing workers with attractive nearby housing, thus facilitating workforce development. For example, in Atlanta Georgia, local businesspeople are helping to raise money for a greenway park. Commenting on this effort, Atlanta real estate developer Bruce Gunter says, "The whole point is to try to keep the middle-class families that are living there and to attract others. The park will be a real anchor for an in-town middle class."⁹ A recent study funded by Englewood's Community Development Department shows median home prices to be well below what Englewood jobs could support—the implication is that higher wage workers at jobs located in the City commute from residences outside of the City. Increasing Centennial Park's size, presence and recreational opportunities will provide an amenity to nearby residential neighborhoods, making them more attractive.

Increased Property Values

A boost in nearby property values are anticipated in response to the improved Centennial Park. Such value increases have been well documented in other areas.¹⁰ Proximity to parks in urban areas has been shown to account for up to 15-20% of residential property value according to the National Association of Home-builders.¹¹ Increased property values benefit both property owners and local government property tax revenue collections. Increased home equity can enable reinvestment in the housing stock, thereby "priming the pump" for housing upgrades and neighborhood gentrification.

Local Business Development

Another potential indirect economic benefit is recreation-related business growth. An increase in park-related activity can invigorate local sporting goods, outdoor recreation equipment and restaurant related businesses. The increase in visitor traffic to the park will provide additional market exposure to all commercial businesses in the area.

Community Impacts

Improved Youth Athletic Programs

Local athletic leagues and teams will take full advantage of the new baseball, softball and soccer fields. The addition of a lighted baseball and softball field will provide evening game time, which is vital to growing sports participation. The Englewood Parks and Recreation youth softball program has tested the popularity of evening games with it's 11-12 year old and 13-15 year old teams. During the last softball season, team games were moved from the day to the evening and participation doubled. By extrapolation, youth program participation can be expected to double from about 375 participants to 750 when the Centennial Park fields are open and available for evening games.

Both Englewood High School and All Souls Catholic School will take advantage of the superior quality of the new fields. Currently, both schools' girls softball teams and boys baseball teams use the same unlit field for practice and games resulting in scheduling conflicts. Evening games at Centennial Park's lighted fields will overcome scheduling issues,

better enable parents to watch games, and result in increased high school fundraising opportunities through concession sales.

Neighborhood Beautification

The City's Comprehensive Plan goals include increasing recreational and open space amenities for its residents. By adding playing fields

and trail linkages, the Centennial Park expansion will not only help the City realize its parks and recreation expansion goals, but also create a significant community asset.

The aesthetic value of the neighborhood and river corridor is enhanced through the clean up and conversion from a vacant, unkempt industrial site, to landscaped, usable park space. Instead of an eyesore, there will be an attractive recreation destination that will improve the community's image as a place to work and live, and be a successful example for continued park and open space development along the entire South Platte River corridor.



Centennial Park after expansion and development, Englewood, Colorado

Environmental Impacts

Given the site's location, park development is a logical use that enabled the City, working through Colorado's Voluntary Cleanup Program, to cost-effectively address environmental concerns.

Reduced Environmental Risks

Environmental conditions at the former landfill were investigated and tested during site acquisition and development of the Park. While no immediate health or environmental risks were discovered, a clay cap was installed over the landfill to eliminate future risks to the South Platte River. The clay cap will mitigate any water run off and protect the surrounding environment from unexpected contamination.

Support For Regional Planning Efforts

Cleanup and development of the Centennial Park site will be a step toward improving the overall South Platte River corridor. The Denver Regional Council of Governments (DRCOG) provides a regional vision for parks and open space in its *MetroVision 2020* regional planning document. The South Platte River is recognized as an important regional resource that provides green space and pedestrian/bicycle linkages throughout the Denver metropolitan area. The regional vision for the South Platte River corridor is to transition from its current industrial uses to a clean open space corridor that provides many recreational opportunities for metro area residents. The Centennial Park expansion has the potential to be a catalyst site for corridor transition.

SUMMARY

Intuitively, park space provides many social and economic benefits to a community. The Centennial Park expansion project has injected over \$1.3 million into the local economy during its development. Other anticipated benefits include increased property values, local business development, improved youth athletic programs, neighborhood beautification, and reduced environmental risks. Additionally, the Centennial Park expansion can be a catalyst site in support of regional open space planning for the larger metropolitan area.

By expanding Centennial Park, The City of Englewood, along with its financial and regulatory partners, overcame significant environmental hurdles to transform a former landfill into an important community and regional asset.

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¹ National Park Service, Rivers, Trails and Conservation Assistance Program, Economic Impacts of Protecting Rivers, Trails, and Greenway Corridors, 4th Edition, 1995.

² Colorado Rockies' professional baseball team member Brent Mayne is sponsoring the field through the Rockies Youth Field of Dreams program, contributing a portion of his salary to be matched by the McCormick Foundation. Under the program, which began in 1995, fields are named after the Rockies player who agrees to serve as the field sponsor.

³ The City of Englewood received a U.S. Environmental Protection Agency Brownfields Pilot Grant in 1997.

⁴ The Colorado Brownfields Revolving Loan Fund is capitalized with U.S. Environmental Protection Agency federal grant monies and is administered on behalf of the State of Colorado by the Colorado Housing and Finance Authority (CHFA).

⁵ Survey respondents report that individual business prospects may or may not explicitly consider parks, open space and recreational amenities in their site selection criteria, and often such amenities are considered only as secondary factors. However, the economic developers responding unanimously consider such amenities implicitly improve the overall business climate and attractiveness of locales, Source: Development Research Partners, March 2001.

⁶ John L. Crompton, Lisa L. Love, and Thomas A. More, An Empirical Study of the Role of Recreation, Parks and Open Space in Companies' (Re) Location Decisions, Journal of Park and Recreation Administration, (1997).

⁷ ERE Yarmouth and Real Estate Research Corporation, Defining New Limits: Emerging Trends in Real Estate, 1998.

⁸ Statistics from Chattanooga News Bureau and Hamilton County, Tennessee, tax assessor.

⁹ Interview reported in The Trust for Public Land's Economic Benefits Report.

¹⁰ In Salem, Oregon, land adjacent to a greenbelt was found to be worth about \$1,200 an acre more than land only 1,000 feet away. In Seattle, Washington, homes bordering the 12-mile Burke Gilman trail sold for 6 percent more than other houses of comparable size. In Oakland, California, a three-mile greenbelt around Lake Merritt, near the city center, was found to add \$41 million to surrounding property values (Elizabeth Brabec, On the Value of Open Spaces, Scenic America, Technical Information Series, Vol. 1, No.2, 1992).

¹¹ Reported in The Trust for Public Land's Economic Benefits Report.

SMART GROWTH FOR BETTER HEALTH

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Many professions are just waking up to the vital connection between community design and public health. These include health professionals, planners, architects and public policy specialists. On the one hand there are the new forms of traditional neighborhoods and communities. They are based on smart growth principles and are compact, pedestrian friendly, walkable, and mixed-use. They contrast to what has prevailed for some 50 years, suburban sprawl places that are automobile-dependent, single land-use developments where all the essential features of living are widely separated.

Here is the emerging truth: Sprawl really does kill. Scientific evidence indicates that about 70 percent of a person's health and longevity can be controlled and only about 30 percent is genetically programmed. A large part of that 70 percent can be associated with the built environment that surrounds people in their everyday lives. Sprawl creates a set of conditions and behaviors that indisputably harm health. Americans need to take sprawl personally, not as some abstraction, nor unalterable feature of American society. Sprawl makes people fat, tired, depressed, stressed, and more likely to have very serious diseases.

Just how unhealthy is the American culture of sprawl and its automobile addiction? Research has revealed that poor physical fitness is a better predictor of death than a host of other documented risk factors that the public is more familiar with, including smoking, hypertension and heart disease. Because of its connection to physical activity, community design really is a matter of life and death. The new mantra is "active living by design." A good green infrastructure within a community can help people get outside for recreational physical activity. But having places to walk to are

probably more important, especially shops, schools, and work.

After some 50 years of sprawl sloth – showing that unhealthy places may be sustainable — the health care profession now has a new name for the sprawl plague: *Sedentary Death Syndrome*. The number of deaths from the sprawl sedentary lifestyle is two times greater than deaths from microbial agents, like bacteria and viruses, and also exceeds all deaths from firearms, illicit use of drugs, sexually transmitted diseases, and motor vehicle accidents. Sedentary Death Syndrome is one of the top three causes of deaths in the United States today. A sedentary lifestyle is about as lethal as smoking a pack of cigarettes a day. Obesity and related illnesses are killing some 300,000 people prematurely yearly, second only to some 430,000 people dying from tobacco-related conditions. If you are among the nearly 40 percent of adults who are sedentary in their leisure time, welcome to the risks of Sedentary Death Syndrome.

Walking is crucial

In contrast to the sprawl-car syndrome, the lesson to be learned is that living in healthy places with greater physical activity and more free time for family, social and civic activities provides a healthier and higher quality of life. Much research has shown that when community design makes it easy, enjoyable, and safe to walk or bike, then people will greatly increase their rates of walking and biking. Street connectivity is a key factor. For example, cul-de-sac streets in sprawl places mean that even if a destination is visibly nearby, "you can't get there from here." In neighborhoods with square, connecting blocks, residents walk up to three times more than in places with non-connecting, cul-de-sac streets. Having access to public transit means that

up to twice as many people walk or bicycle, as compared to sprawl, automobile-dependent places.

A number of research studies have found that people walk more in neighborhoods that have design features making them most walkable versus places that are least walkable. In terms of walking trips per week, these differences were: 4.3 versus 0.8 in Austin, Texas; 6.8 versus 1.1 in the San Francisco Bay area; and 2.1 versus 0.5 in Portland, Oregon. In other words, such results show that people will take advantage of designs that promote walking.

Walkable communities are very important because, even now without well-designed pedestrian friendly places, walking is the primary way that Americans get some exercise, 43.2 percent, versus 10.6 percent for jogging or running, 6.3 percent for aerobics or aerobic dancing, and 5.6 percent for swimming. In the past 20 years, when sprawl has run rampant, the number of trips people take by walking has decreased by more than 42 percent. Walking to school has also decreased by a similar amount. Other research found that active people have about half the health care costs of sedentary people.

Brownfields part of the picture

Smart growth places are, literally, healthy places. They may go by various names, like New Urbanism, Traditional Neighborhood Development, sustainable communities, and many others. They can be built on greenfield sites, or be redevelopment projects in older, inner-ring suburbs, or infill projects in urban cores. Reuse of brownfields can be these new mixed-use communities, making brownfield cleanups a potential provider of public health benefits, even though they may be difficult to quantify. State brownfields programs often demonstrate their effectiveness in terms of increased employment and other socioeconomic measures, without emphasizing the concomitant public health benefits.

In other words, by promoting routine physical activity and providing urban green infrastructure, brownfields projects can improve public health. From this perspective, national epidemics of obesity and related diseases make brownfields sites more valuable than ever

before. Land is more valuable than ever, especially in geographic areas where developable land is at a premium. Under conditions of housing shortages and poor health habits, cleanup costs are more acceptable and offer more value-added.

For instance, the cleanup methods that many states are approving for brownfields often involve containment and institutional controls. Minimizing cleanup costs have driven many decisions. However, given the increased value from housing in well design mixed-use projects, cleanup methods that allow unlimited residential exposure can be better justified.

Social capital and automobiles

Obtaining health benefits from smart growth places can best be appreciated by focusing on two main characteristics of sprawl living: social isolation and automobile dependency.

Considerable research has unearthed the many relationships between health and social capital or the degree to which people are connected to others in their community. One thing is certain. Social isolation is a fundamental cause of illness, not a consequence of it. Lifestyle changes can cause people's health to improve or decline and, among many possible lifestyle changes, social isolation is very important. A general research finding is that people who are socially isolated are between two and five times more likely to die from all causes, compared to individuals who have other things in common except that they have close ties with family, friends, and the community. Social connectedness has an independent impact on how long people live.

Researchers found that states have varying degrees of social capital. Poor health was found to correlate with states with low social capital. The chances of having poor to middling health increased by about 40 to 70 percent if people moved from a state with high social capital (for example, Minnesota, Vermont and Iowa) to one with low social capital (for example, Alabama, Arkansas and Louisiana). Amazingly, one could improve one's health almost as much by moving to a high social capital state as by quitting smoking.

Because of automobile dependency, living in sprawl means a higher health risk from automobiles. The automobile fatality rate in the sprawl mecca of Atlanta in 1998 was over five times greater than in New York City, and twice as great as in Portland, Oregon. For sprawl mothers gloating about the safer suburbs, note that adolescent males in the suburbs die in auto accidents at the same rate as their counterparts die of gunshot deaths in cities. Most importantly, the incessant use of vehicles deprives people of the time needed to be healthy through regular physical activity.

Automobile dependency is not the only cause of physical inactivity and obesity, and their many health impacts, but it surely is one of the most important. America is suffering from an “epidemic of inactivity.” Virtually all mass-produced suburbs built in the past 50 years are not walkable, mixed-use places, and about 60 percent of Americans live in such automobile dependent suburbs. This is up from 15 percent in 1940, showing the fundamental change between pre- and post-World War II lifestyles.

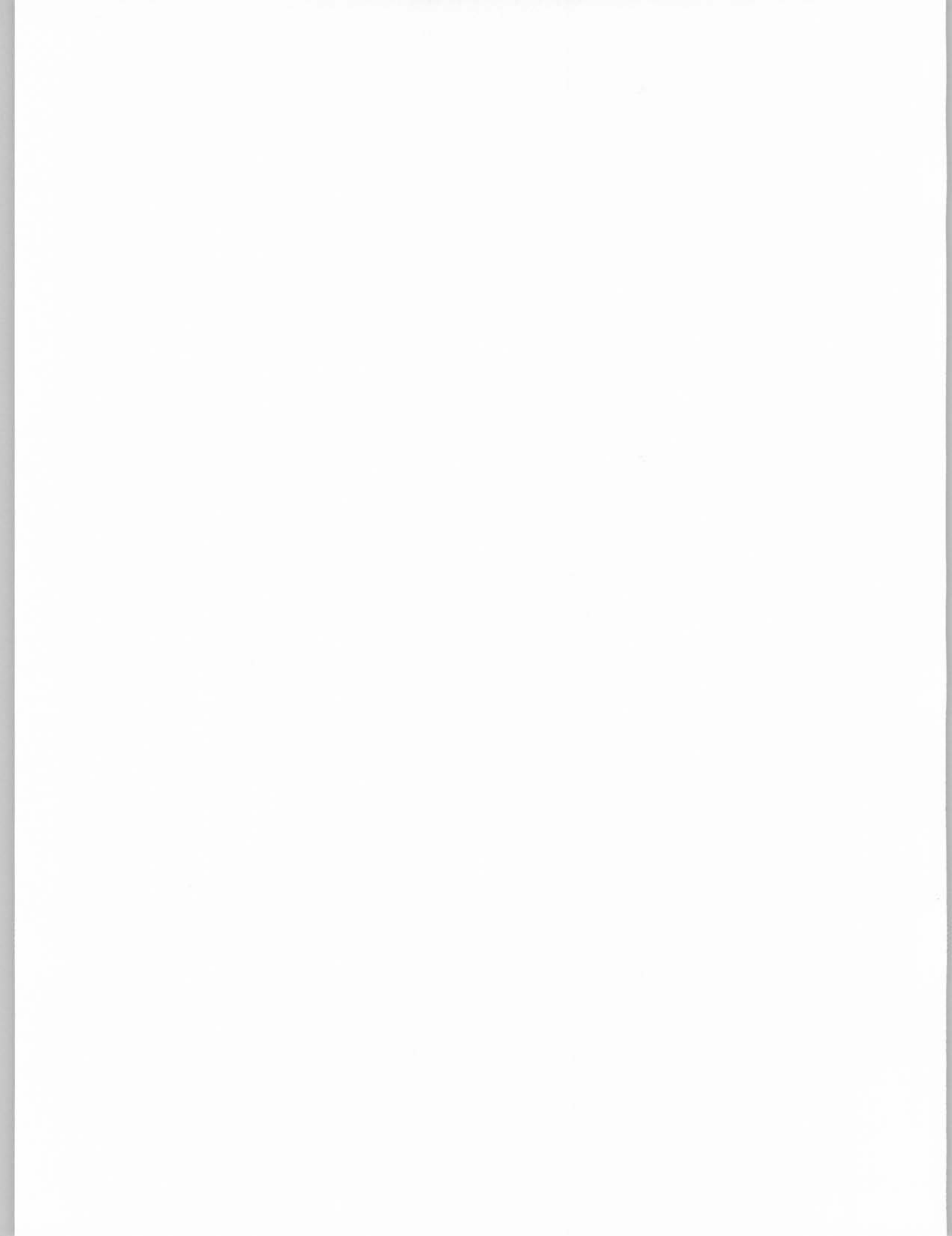
Market imbalance

Here is a most remarkable and important fact. According to considerable data, at least one-third of home-seekers – that means millions of citizens – want the smart growth option. They want housing that is just one part of a smaller scale, multi-functional community. They want out of traffic congestion. They want a place that is designed to raise their quality of life, not one to satisfy business interests, like fast food places feeding frenzied people in cars fast-forwarding to their next stop. Millions of Americans have suffered sprawl and its many assaults on quality of life enough to want healthy places, and the number is growing, as it should.

What do seekers of healthy places find in the marketplace? They find more of the same masquerading as something different. The amazing fact, according to considerable data, is that – although about one-third of people seeking homes want healthy places – *substantially less than one percent* of available homes fit the smart growth model. This is a huge demand-supply gap. Moreover, many places that may seem consistent with smart growth do not conform well to

the checklist in NGA’s “New Community Design to the Rescue” report issued in 2001 (available at www.nga.org), which was derived from the ten smart growth principles developed several years ago. However, there are scores of authentic smart growth places, showing that some developers and architects have the necessary talent, will and expertise to build true alternatives to sprawl.

As the connection between improved health and community design based on smart growth principles becomes more widely known, the many obstacles to building more healthy places will be reduced, especially zoning laws that favor sprawl. In the end, the smart growth movement will fulfill its promise when individuals see tangible benefits for themselves and have more housing options in a fair market. It is much more about saving oneself and one’s children than saving the environment or the world.



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